

Chapter 1

Pharmacy Profession

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PHARMACY

The science and art concerned with the preparation and standardization of drugs.

□ Its scope includes

1. the cultivation of plants that are used as drugs,
2. the synthesis of chemical compounds of medicinal value, and
3. the analysis of medicinal agents.

PHARMACIST

- The profession of pharmacy exists to safeguard the health of the public
- The *pharmacist* is one who is licensed to prepare and dispense medications, counsel patients, and monitor outcomes pursuant to a prescription from a licensed health professional
- The role of the modern pharmacist evolved
 - from compounder and dispenser
 - to providing medication information and preventing medication-related problems

PHARMACISTS

- They are responsible for the preparation of the dosage forms of drugs, such as tablets, capsules, and sterile solutions for injection.
- They compound physicians', dentists', and veterinarians' prescriptions for drugs.

EVOLUTION OF THE PHARMACIST'S ROLE

During the twentieth century, the pharmacy profession has evolved through four stages.

- ▣ **Traditional Era**
- ▣ **Scientific Era**
- ▣ **Clinical Era**
- ▣ **Pharmaceutical-care Era**

TRADITIONAL ERA

- Early twentieth century
- Formulation and dispensing of drugs from natural sources
 - *Pharmacognosy*
 - The study of the medicinal properties of natural products of animal, plant, and mineral origins
 - *Galenical pharmacy*
 - Techniques for preparing medications



SCIENTIFIC ERA

- Began after World War II
- Emergence of the pharmaceutical industry
 - Drugs made in factories, not apothecary shop
- Pharmacy education emphasized sciences
 - *Pharmacology*
 - The scientific study of drugs and their mechanism of action including side effects
 - *Pharmaceutics*
 - Release characteristics of drug dose forms

CLINICAL ERA

- 1975: Millis Report, Pharmacists for the Future
- New educational emphasis on clinical (patient-oriented) pharmacy
 - *Pharmacokinetics*
 - the activity of a drug within the body over a period of time; includes absorption, distribution, metabolism, and elimination
 - *Pathophysiology*
 - the study of disease and illnesses affecting the normal function of the body

PHARMACEUTICAL-CARE ERA

- 1990: Hepler and Strand defined
- *Pharmaceutical care*
 - a philosophy that expanded the pharmacist's role to include appropriate medication use to achieve positive outcomes with prescribed drug therapy
 - includes
 - Monitoring response to therapy
 - Educating patients and dispensing prescriptions

ROLE OF THE PHARMACIST

Today's pharmacist:

- *Compounds* and dispenses drugs
- Gathers information about patients
- Counsels on possible side effects and adverse reactions
- Monitors for drug interactions
- Screens, monitors, and advises for self-treatment with *over-the-counter (OTC)* products sold without a prescription
- Provides drug information to other healthcare professionals
- Advises on home healthcare supplies and medical equipment

PHARMACIST WORK PLACE

- Community Pharmacy
- Hospital Pharmacy
- Home Healthcare
- Health maintenance organization (HMO)
- Long-term care facilities
- Specialized practice
 - psychiatry
 - drug abuse
- Nursing homes
- Nuclear Pharmacy

COMMUNITY PHARMACIST

- Dispenses drugs for existing disease
- Involved in patient care initiatives to prevent or identify disease
 - Administration of immunizations
 - screening for and educating about hypertension, diabetes, and other conditions
 - providing education about lifestyle choices and dietary supplements
- Runs a business
 - hires and supervises employees
 - deals with insurance companies
 - maintains inventory



HOSPITAL PHARMACIST

- Dispenses oral medications
- Prepares and dispenses parenteral medications
- Sometimes specializes, with advanced training in an area of patient care
- Educates and counsels patients
- Provides drug information
- Administers a department
 - develops policies and procedures
 - purchases drugs and supplies
 - monitors drug use in the hospital



HOME HEALTHCARE PHARMACIST

- Prepares medications and IVs for home delivery and use
 - including IV nutrition and antibiotics
 - cancer chemotherapy
 - pain medications
- Educates patient or caregiver on appropriate and safe medication use
- Monitors patient's response to prescribed therapies

OTHER PHARMACY SETTINGS

- ▢ Health maintenance organization (HMO)
- ▢ Long-term care facilities
- ▢ Specialized practice
 - psychiatry
 - drug abuse
- ▢ Nursing homes
 - geriatrics

NUCLEAR PHARMACY

- Nuclear pharmacist

- Procures, stores, compounds, dispenses, and provides information about radioactive pharmaceuticals used for diagnostic and therapeutic purposes

COMMUNITY PHARMACY

- Three fifths of all pharmacists in the United States work in a *community pharmacy* (*retail pharmacy*).
 - an independent or chain pharmacy that dispenses prescription medications to outpatients

COMMUNITY PHARMACY

- Most community pharmacies are divided into
 - a back prescription area offering prescription merchandise and related items
 - a front area offering over-the-counter (OTC) drugs, toiletries, cosmetics, and greeting cards
- Community pharmacies may be
 - independently owned small businesses
 - part of large retail chains
 - franchise operations
- The recent trend is toward fewer independent pharmacies

COMMUNITY PHARMACY

A *chain pharmacy* is a community pharmacy that consists of several similar pharmacies in the region (or nation) that are corporately owned.

- May be national or regional
 - in department stores
 - grocery stores
 - typical corner drugstores
- Located to allow for large-volume dispensing with heavy use of both pharmacy techs and automation
- Administrative decisions are made at the corporate level

INSTITUTIONAL PHARMACY

Institutional pharmacies are organized under a corporate structure, following specific rules and regulations for accreditation.

- A pharmacy associated with any organized healthcare delivery system
 - hospital pharmacy is the most common example
 - more recent examples of places where institutional pharmacies can be found include :
 - home healthcare
 - long-term care facilities
 - managed-care organizations

INSTITUTIONAL PHARMACY

A *hospital pharmacy* is an institutional pharmacy that dispenses and prepares drugs and provides clinical services in a hospital setting.

- One fourth of all pharmacists work in a hospital setting in USA
 - an institution that offers 24-hour healthcare service; that has six or more beds, a governing authority, and an organized medical staff; and that offers nursing and pharmacy services
 - carries out the functions of maintaining drug treatment records and ordering, stocking, compounding, repackaging, and dispensing medications and other supplies

INSTITUTIONAL PHARMACY

A *home healthcare pharmacy* is a pharmacy that dispenses, prepares, and delivers drugs and medical supplies directly to the home of the patient.

- ▣ Spiraling hospitalization costs, regulatory changes, and advances in parenteral therapies have created an explosion in this field
- ▣ The home healthcare market continues to grow because of our aging society and as an alternative to the higher cost of hospitalizations
 - Many hospitalized patients are discharged as soon as possible to continue their recovery at home with IV solutions.

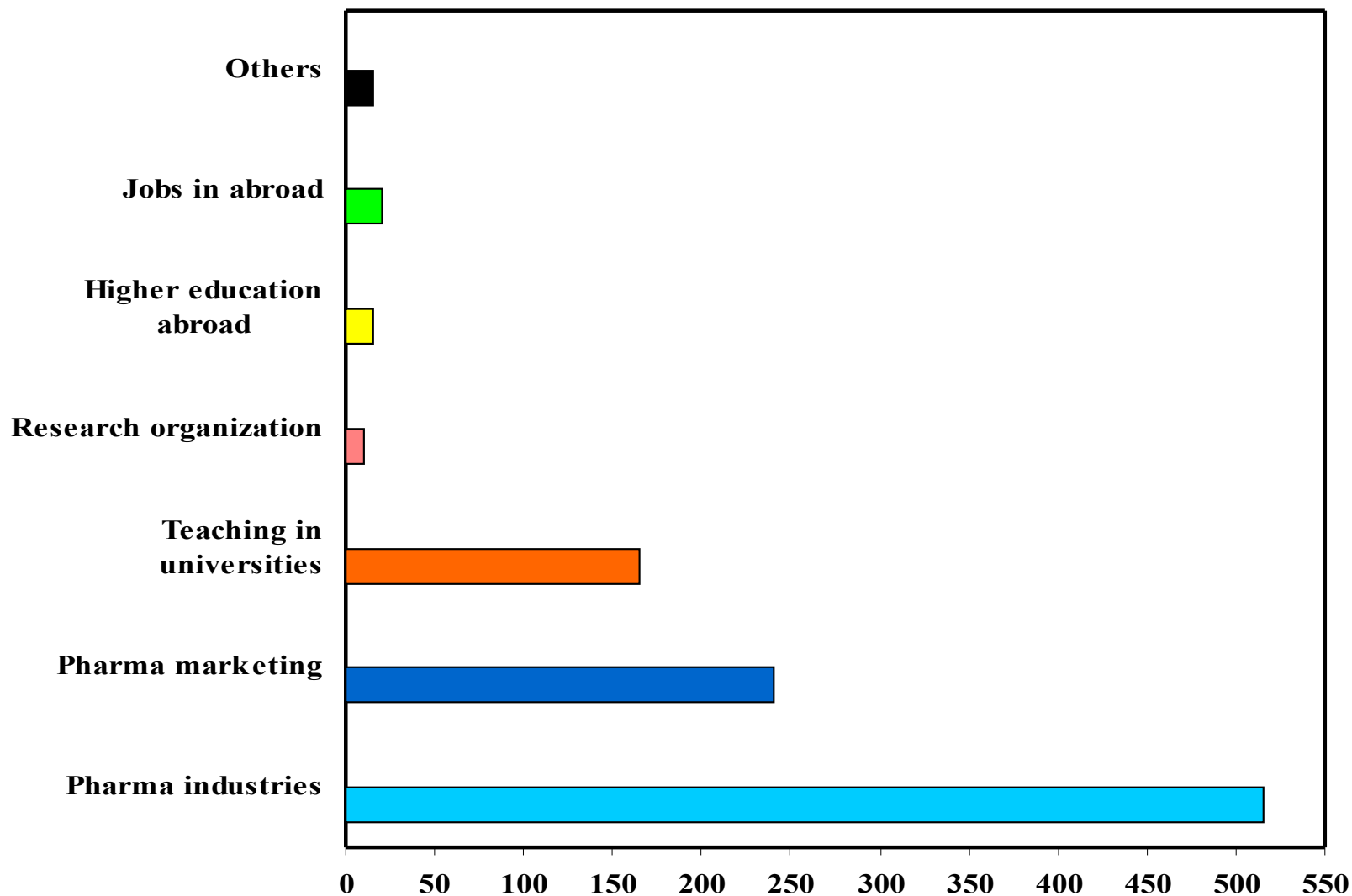
PHARMACY PROFESSION IN BANGLADESH

Pharmacy is a multi-disciplinary subject composed of all aspects of drugs including

- its manufacturing,
- synthesis,
- quality control
- and quality assurance,
- marketing,

- handling,
- safety matters,
- patients care,
- invention,
- and public awareness for the use of drugs, etc.

PRESENT EMPLOYMENT OF PHARMACISTS IN BD/YEAR



JOB SCOPE OF PHARMACISTS

- ▣ Pharmaceutical Industry - API, Finished products and Excipients based industries (Production, QC, QA, PD, cGMP Training, Warehouse, Drug Research and Invention)
- ▣ Pharmaceutical Marketing (PMD, MSD, Sales Promotion, Clinical Services, Training for field forces, IM)
- ▣ Drug Regulatory Affairs

- Hospital Pharmacy (Govt. and Private Hospitals)
- Academic positions in the Govt. and private universities
- Directorate General of Drug Administration
- Pharmacy Council of Bangladesh
- Drug Testing Laboratories
- Opportunities in abroad for jobs, research, and teaching

- Clinical Pharmacy
- Community Pharmacy
- Retail & Chain Pharmacy
- Dispensing Pharmacy
- Diagnostic Laboratories
- Research & Development in Research Institutes
(New drug molecule, Novel Drug Delivery System, Improved Healthcare)